TENNESSEE DEPARTMENT OF EDUCATION
DIVISION OF CAREER AND TECHNICAL EDUCATION

2014-15 Programs of Study

Tennessee's Career and Technical Education (CTE) Programs of Study are meant to provide a relevant framework of industry-aligned, rigorous courses that progress a student in knowledge and skills year over year. They also provide invaluable opportunities for students to experience a subject they are passionate about and explore interests that could lead to postsecondary learning and future career paths. These sequenced courses also reflect and support the three credit "elective focus" requirement for graduation. Level one courses are most often taken by students in ninth grade; however, a district may make scheduling decisions that work best for their community and students.

To become a concentrator in CTE and to fulfill the elective focus requirement, a student must earn three credits in a Program of Study or a Career Cluster. Courses in a Career Cluster include those listed as part of a Program of Study (highlighted in this document), as well as courses that are identified as cluster electives (highlighted, where applicable, at the end of each listed Career Cluster).

For additional information about any courses or Programs of Study in the 16 Career Clusters, please reach out to the following Career Cluster Consultants or visit our webpage at:
http://www.tn.gov/education/cte/Career_Clusters/Career_Clusters.shtml

Agriculture, Food, & Natural Resources	Steve Gass	Steven.Gass@tn.gov	(615) 532-2847
Architecture & Construction	Vacant*		
Arts, Audio/Visual Technology, & Communications	Vacant*		
Business Management & Administration	Joy Smith	Joy.Smith@tn.gov	(615) 532-6248
Education & Training	Deborah Thompson	Deborah.Thompson@tn.gov	(615) 532-2840
Finance	Joy Smith	Joy.Smith@tn.gov	(615) 532-6248
Government & Public Administration	Sheila Carlton	Sheila.Carlton@tn.gov	(615) 532-2839
Health Science	Sheila Carlton	Sheila.Carlton@tn.gov	(615) 532-2839
Hospitality & Tourism	Deborah Thompson	Deborah.Thompson@tn.gov	(615) 532-2840
Human Services	Deborah Thompson	Deborah.Thompson@tn.gov	(615) 532-2840
Information Technology	Bethany Wilkes	Bethany.Wilkes@tn.gov	(615) 532-2844
Law, Public Safety, Corrections, & Security	Sheila Carlton	Sheila.Carlton@tn.gov	(615) 532-2839
Manufacturing	Bethany Wilkes	Bethany.Wilkes@tn.gov	(615) 532-2844
Marketing	Joy Smith	Joy.Smith@tn.gov	(615) 532-6248
Science, Technology, Engineering, & Mathematics (STEM)	Bethany Wilkes	Bethany.Wilkes@tn.gov	(615) 532-2844
Transportation, Distribution, & Logistics	Vacant*		

*For vacant positions, please contact Casey Haugner Wrenn at Casey.Haugner@tn.gov or (615) 532-4879

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Agriculture, Food, & Natural Resources

Program of Study	Level 1	Level 2	Level 3	Level 4
Veterinary and Animal Science	Agriscience[1]	Small Animal Science	Large Animal Science	Veterinary Science[1] -and/or- WBL Internship at Vet Office
	Supervised Agricultural Experience			
Agricultural Engineering and Applied Technologies	Agriscience[1]	Principles of Agricultural Mechanics	Agricultural Power and Equipment	Agricultural and Biosystems Engineering[4]
	Supervised Agricultural Experience			
Agribusiness	Agriscience[1]	Principles of Agribusiness	Organizational Leadership and Communications	Agricultural Business and Finance[2,3]
	Supervised Agricultural Experience			
Food Science	Agriscience[1]	Principles of Food Production	Food Science and Safety	Advanced Food Science
	Supervised Agricultural Experience			
Horticulture Science	Agriscience[1]	Principles of Plant Science and Hydroculture	Greenhouse Management[3]	Landscaping and Turf Science
	Supervised Agricultural Experience			
Environmental and Natural Resource Management	Agriscience[1]	Applied Environmental Science[1]	Plant and Soil Sciences[4]	Natural Resources Management -and/or- AP Environmental Science
	Supervised Agricultural Experience			

[1] Satisfies one lab science credit required for graduation.
[2] Satisfies ½ credit of Personal Finance required for graduation.
[3] State approved dual credit course.
[4] Local dual credit and/or dual enrollment opportunities exist for this course.

Available courses for elective credit in this cluster: *Introduction to Geographic Information Systems (GIS)*

Architecture & Construction

Program of Study	Level 1	Level 2	Level 3	Level 4
Production Design	Computer Aided Drafting I	Computer Aided Drafting II	Advanced Drafting and Design	Entrepreneurship[1]
Electrical Systems	Construction Core	Electrical I	Electrical II	Entrepreneurship[1]
Masonry Construction	Construction Core	Masonry I	Masonry II	Entrepreneurship[1]
Concrete Construction	Construction Core	Concrete I	Concrete II	Entrepreneurship[1]
Plumbing	Construction Core	Plumbing I	Plumbing II	Entrepreneurship[1]
Heating, Ventilation, Air Conditioning, and Refrigeration	Construction Core	HVAC/R I	HVAC/R II	Entrepreneurship[1]
Welding	Introduction to Welding	Basic Principles of Welding	Advanced Welding Applications and Certification	Entrepreneurship[1]
Carpentry	Construction Core	Carpentry I	Carpentry II	Entrepreneurship[1]
Interior Design	Foundations of Interior Design	Residential Interior Design	Commercial Interior Design	Advanced Interior Design

[1] Satisfies ½ credit of Economics required for graduation.

Arts, Audio/Visual Technology, & Communications

Program of Study	Level 1	Level 2	Level 3	Level 4
Printing Graphics	Digital Arts and Design I	Printing Graphics Technology I	Printing Graphics Technology II	
Design Communications	Digital Arts and Design I	Digital Arts and Design II	Digital Arts and Design III	Animation Simulation and Motion Graphics
Audio Production	Audio Production I	Audio Production II	Audio Production III	
Journalism and Broadcasting	Journalism (optional)	Broadcasting I	Broadcasting II	Broadcasting III
Fashion Design	Visual Art I	Foundations of Fashion Design	Fashion Design	Advanced Fashion Design

Available courses for elective credit in this cluster: *Interactive Multimedia Presentations*

Business Management & Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
Business Management	Business Principles -and/or- Computer Applications	Accounting I	Business Economics[1] -and- American Business Legal Systems[2]	Business Management -and/or- Virtual Enterprise International[1]
Administrative and Information Support	Business Principles -and/or- Computer Applications	Business Communications	Administrative Management	Advanced Computer Applications
Health Services Administration	Business Principles -and/or- Computer Applications	Health Science Education	Administrative Management	Health Information Technology

[1] Satisfies ½ credit of Economics required for graduation.
[2] Satisfies ½ credit of U.S. Government required for graduation.

Available courses for elective credit in this cluster: *Interactive Multimedia Presentations*, *Accounting II*, *Personal Finance*, *Entrepreneurship, Financial Planning, and Banking & Finance*

Education & Training

Program of Study	Level 1	Level 2	Level 3	Level 4
Teaching as a Profession (K-12)	Fundamentals of Education	Teaching as a Profession I	Teaching as a Profession II	Teaching as a Profession III
Early Childhood Education (Pre-K-4)	Fundamentals of Education	Early Childhood Education Careers II	Teaching as a Profession II	Teaching as a Profession III
Educational Support Careers	Fundamentals of Education	Teaching as a Profession I	School Counseling	Teaching as a Profession III

Available courses for elective credit in this cluster: *Lifespan Development*

Finance

Program of Study	Level 1	Level 2	Level 3	Level 4
Banking and Finance	Business Principles -and/or- Computer Applications	Personal Finance -and- Business Economics[1] -or- Economics	Accounting I	Banking and Finance
Accounting	Business Principles -and/or- Computer Applications	Accounting I	Accounting II	
Financial Planning	Business Principles -and/or- Computer Applications	Personal Finance -and- Business Economics[1]	Accounting I	Financial Planning

[1] Satisfies ½ credit of Economics required for graduation.

Available courses for elective credit in this cluster: *American Business Legal Systems*, *Entrepreneurship*

Government & Public Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
Public Management and Administration	Principles of Public Service	Public Management and Administration	U.S. Government and Civics[1]	Public Law and Budgeting

[1] Satisfies ½ credit of U.S. Government required for graduation.

Available courses for elective credit in this cluster: *Court Systems and Practices*

Health Science

Program of Study	Level 1	Level 2	Level 3	Level 4
Biotechnology Research	Health Science Education	Diagnostic Medicine	Anatomy and Physiology[2]	Biomedical Applications[2] -and/or- Forensic Science[2]
Public Health	Health Science Education (optional)	Emergency Preparedness	Behavioral and Community Health	Global Health and Epidemiology
Diagnostic Services	Health Science Education	Diagnostic Medicine	Anatomy and Physiology[2] -and/or- Medical Terminology[1]	Cardiovascular Services -and/or- Clinical Internship
Health Informatics	Health Science Education	Medical Terminology[1]	Health Information Technology	Clinical Internship
Therapeutic Nursing Services	Health Science Education	Medical Therapeutics	Anatomy and Physiology[2] -and/or- Medical Terminology[1]	Nursing Education
Emergency Services	Health Science Education	Emergency Preparedness	Anatomy and Physiology -and/or- Medical Terminology[1]	Emergency Medical Services[1]
Therapeutic Clinical Services	Health Science Education	Medical Therapeutics	Rehabilitation Careers -or- Dental Science -or - Pharmacological Science -or- Nutrition Science and Diet Therapy[2]	Anatomy and Physiology[2] -and/or- Clinical Internship

[1] Local dual credit and/or dual enrollment opportunities exist for this course.
[2] Satisfies one lab science credit required for graduation.

Hospitality & Tourism

Program of Study	Level 1	Level 2	Level 3	Level 4
Culinary Arts	Culinary Arts I	Culinary Arts II	Culinary Arts III	Entrepreneurship[1]
Hospitality and Tourism Management	Marketing and Management I Principles[1]	Travel and Tourism Operations	Hospitality Management	Advertising and Public Relations
Sports and Entertainment Management	Marketing and Management I Principles[1]	Travel and Tourism Operations	Sports and Entertainment Marketing	Advertising and Public Relations

[1] Satisfies ½ credit of Economics required for graduation.

Available courses for elective credit in this cluster: *Exploration of Organizational Leadership & Marketing*

Human Services

Program of Study	Level 1	Level 2	Level 3	Level 4
Childhood Development Services	Early Childhood Education Careers I	Early Childhood Education Careers II	Early Childhood Education Careers III	Early Childhood Education Careers IV
Social Health Services	Introduction to Human Studies	Lifespan Development	Family Studies	Human Services Practicum -and/or- Psychology
Dietetics and Nutrition	Introduction to Human Studies	Nutrition Across the Lifespan	Nutrition Science and Diet Therapy[2]	Human Services Practicum -and/or- Psychology
Cosmetology	Principles of Cosmetology	Design Principles of Cosmetology	Chemistry of Cosmetology	Entrepreneurship[1]
Barbering	Barbering I	Barbering II	Barbering III	Entrepreneurship[1]

[1] Satisfies ½ credit of Economics required for graduation.
[2] Satisfies one lab science credit required for graduation.

Available courses for elective credit in this cluster: *Personal Finance*

Information Technology

Program of Study	Level 1	Level 2	Level 3	Level 4
Programming & Software Development	Information Technology Foundations	Programming and Logic I	Programming and Logic II	Game Programming -and/or- AP Computer Science
Networking Systems	Information Technology Foundations	Computer Systems	Networking	Cabling and Internetworking -and- IT Clinical Internship
Web Design[1]	Computer Applications (optional)	Web Page Design I Foundations	Web Page Design II Site Designer	Web Page Design III eCommerce

[1] Students who have strong basic computer skills or who took Computer Applications (or a similar course) in middle school can begin this program of study with the Level 2 course.

Available courses for elective credit in this cluster: *Introduction to Geographic Information Systems (GIS), Interactive Multimedia Presentations*

Law, Public Safety, Corrections, & Security

Program of Study	Level 1	Level 2	Level 3	Level 4
Law Enforcement Services	Principles of Law, Corrections, and Security	Criminal Justice I	Criminal Justice II	Criminal Justice III: Investigation
Fire Management Services	Principles of Fire and Emergency Services	Emergency Preparedness	Fire Science I	Fire Science II -and/or- Emergency Medical Services[2]
Legal and Correction Services	Principles of Law, Corrections, and Security	Criminal Justice I	U.S. Government and Civics[1]	Court Systems and Practices

[1] Satisfies ½ credit of U.S. Government required for graduation.
[2] Local dual credit and/or dual enrollment opportunities exist for this course.

Manufacturing

Program of Study	Level 1	Level 2	Level 3	Level 4
Machining Technology	Principles of Manufacturing	Principles of Machining I	Principles of Machining II	Manufacturing Applications
Electro-mechanical Technology	Principles of Manufacturing	Introduction to Electro-mechanical	Electro-mechanical I	Electro-mechanical II
Mechatronics	Principles of Manufacturing	Digital Electronics	Mechatronics I[1]	Mechatronics II[1]

[1] Local dual credit and/or dual enrollment opportunities exist for this course.

Available courses for elective credit in this cluster: *Project Lead the Way (PLTW)* courses aligned to Manufacturing, and *Robotics & Automated Systems*

Marketing

Program of Study	Level 1	Level 2	Level 3	Level 4
Marketing Communication	Exploration of Organizational Leadership & Marketing	Marketing and Management I: Principles[1]	Business Communications -and/or- Marketing and Management II: Advanced Strategies	Advertising and Public Relations
Entrepreneurship	Exploration of Organizational Leadership & Marketing	Marketing and Management I: Principles[1]	Marketing and Management II: Advanced Strategies	Entrepreneurship[1] -and/or- Virtual Enterprise International[1]
Merchandising	Exploration of Organizational Leadership & Marketing	Marketing and Management I: Principles[1]	Retail Operations[1]	Marketing Research and Analysis

[1] Satisfies ½ credit of Economics required for graduation.

Available courses for elective credit in this cluster: *Sports and Entertainment Marketing, Hospitality Management, Travel & Tourism,* and *Personal Finance*

STEM

Program of Study	Level 1	Level 2	Level 3	Level 4
Engineering by Design	Foundations of Technology (EBD)	Technological Design (EBD)	Advanced Design Applications (EBD) -and/or- Advanced Technological Applications (EBD)	Engineering Design (EBD)
Engineering	Principles of Engineering and Technology	Engineering Design I	Engineering Design II	Engineering Practicum -and/or- AP Physics
Technology	Principles of Engineering and Technology	Digital Electronics	Robotics & Automated Systems	Engineering Practicum -and/or- AP Physics
STEM Education	STEM I: Foundation	STEM II: Applications	STEM III: STEM in Context	STEM IV: STEM Practicum
Project Lead the Way	Introduction to Engineering (PLTW)	Principles of Engineering (PLTW)	Choice of the following: Aerospace Engineering (PLTW) Civil Engineering & Architecture (PLTW) Biotechnical Engineering (PLTW) Digital Electronics (PLTW) Computer Integrated Manufacturing (PLTW)	Engineering Design and Development (PLTW)

Note: Courses marked EBD are part of the *Engineering by Design* curriculum package and may require additional costs and training to implement. Courses marked PLTW are part of the *Project Lead the Way* curriculum package and may require additional costs and training to implement.

Available courses for elective credit in this cluster: *Introduction to Geographic Information Systems (GIS)*

Transportation, Distribution, & Logistics

Program of Study	Level 1	Level 2	Level 3	Level 4
Automotive Maintenance and Light Repair	Maintenance and Light Repair I	Maintenance and Light Repair II	Maintenance and Light Repair III	Maintenance and Light Repair IV
Automotive Collision Repair	Transportation Core	Collision Repair: Non-Structural	Collision Repair: Painting and Refinishing	Collision Repair: Estimating and Customer Service -and/or- Collision Repair: Structural
Aviation Flight	Introduction to Aerospace	Aviation I: Principles of Flight	Aviation II: Advanced Flight	
Aviation Maintenance	Introduction to Aerospace	Aviation Maintenance I	Aviation Maintenance II	
Distribution and Logistics	Principles of Transportation, Distribution, and Logistics	Distribution and Logistics I	Distribution and Logistics II	
2-4 Cycle Engines	Transportation Core	2-4 Cycle Engine I	2-4 Cycle Engine II	2-4 Cycle Engine III
Diesel Technology	Transportation Core	Diesel: Preventative Maintenance	Diesel: Electrical/ Electronic	Diesel: Engine

Available courses for elective credit in this cluster: *Entrepreneurship*

Middle School

Career Cluster(s)	6th Grade	7th Grade	8th Grade
• Agriculture, Food, & Natural Resources		Introduction to Agricultural Sciences	Introduction to Agricultural Sciences
• Business Management & Administration • Finance • Information Technology • Marketing	Keyboarding[1]	Keyboarding	Keyboarding Computer Applications
• Education & Training • Human Services	Introduction to Social Health[2]	Introduction to Social Health	Introduction to Social Health
• Manufacturing • Science, Technology, Engineering & Mathematics (STEM)	Exploring Technology (EBD)	Inventions and Innovations (EBD)	Technological Systems (EBD)
• Information Technology • Manufacturing • Science, Technology, Engineering & Mathematics (STEM)	STEM Explorers	STEM Innovators	STEM Designers
• Health Science		Introduction to Health Science	Introduction to Health Science Medical Detectives (PLTW)
• Architecture & Construction • Information Technology • Manufacturing • Science, Technology, Engineering & Mathematics (STEM) • Transportation, Distribution & Logistics	Design and modeling (PLTW)	Automation and Robotics (PLTW)	Energy and the Environment (PLTW) Flight and Space (PLTW) Green Architecture (PLTW) Magic of Electrons (PLTW) Science and Technology (PLTW)

Note: Courses marked EBD are part of the *Engineering by Design* curriculum package and may require additional costs and training to implement. Courses marked PLTW are part of the *Project Lead the Way* curriculum package and may require additional costs and training to implement.
[1]Keyboarding may also be used with 4th and 5th grade students.
[2]Introduction to Social Health may also be used with 5th grade students.